

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-20054-XXXX

WASTE DISCHARGE REQUIREMENTS

FOR
THE BOEING COMPANY
INACTIVE RANCHO CORDOVA TEST SITE
AGRICULTURAL WELL AND GUN CLUB WELL DISCHARGES
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. On 5 July 2005, the Boeing Company (hereafter Discharger) submitted a Report of Waste Discharge (RWD) for two groundwater treatment facilities to treat and dispose of groundwater extracted at two non-potable water supply wells downgradient from the Inactive Rancho Cordova Test Site (IRCTS). The extracted water will be used for dust control and construction compaction from one well and landscape irrigation at the other well.
2. For the purposes of this Order, the groundwater treatment facility (GWTF) shall mean the groundwater treatment plant and the designated discharge facilities. The facility site locations are shown on Attachment A, which is attached hereto and made part of this Order by reference.
3. The GWTF for the Agricultural Well (AG Well) is located in The Sunridge development south of Douglas Road in Rancho Cordova, in Section 20, T8N, R7E MDB&M. Agricultural and open space activities border the GWTF. The application area is shown on Attachment B, which is attached hereto and made part of this Order by reference.
4. The GWTF for the Gun Club Well is located at 11551 Douglas Road, Sacramento, in Section 7, T8N, R7E MDB&M. Industrial and open space activities border the GWTF. The application area is depicted on Attachment B.
5. The AG Well treatment facility is on Assessor's Parcel No. 067-0650-009, and the discharge areas are on Assessor's Parcel Nos. 067-0650-001 through 028, and 067-0040-004. The Gun Club Well treatment facility and discharge areas are on Assessor Parcel No. 067-0030-002-0000
6. Groundwater pollution emanating from sources on the Inactive Rancho Cordova Test site have been detected in the AG Well located south of Douglas Road and the Gun Club Well located west of Sunrise Boulevard and north of Douglas Road. The pollution consists primarily of elevated concentrations of the volatile organic constituent (VOC) trichloroethylene (TCE) and perchlorate, a component of solid rocket propellant. The two wells have been found to contain low concentrations of TCE and no perchlorate. The AG Well served ranching and limited farming in the vicinity of the well. The area is currently being converted to a large housing tract that is part of the Sunrise Douglas development. The AG Well was put to use as a supply of water for dust control and compaction of soils for construction of the housing development. Finding TCE in the well led to discontinuance of use of the well and the search for alternate sources. There are no

other readily available sources of water in close proximity to the construction area. Water for dust control and compaction is currently being trucked to the construction site. The Gun Club Well is used to irrigate the landscaping and for non-potable purposes (sinks and toilets) at the Gun Club. Drinking water for the club is supplied by bottled water. There is not an existing supply of unpolluted water that can easily be used in lieu of the existing well.

7. The Discharger, along with the Aerojet-General Corporation is in the process of completing the design and construction of a groundwater extraction and treatment system to contain the groundwater pollution in the southern portion of the IRCTS.

Gun Club Well Treatment Facility and Discharge

8. The Gun Club Well produces 200-250 gallons per minute (gpm). During the summer time the well is used to produce up to 20,000 gallons per day for irrigation of the landscaping at the Gun Club. Little to no use of the well occurs between November and March. The average monthly flow during April to October is 217,000 gallons.
9. Currently, only TCE has been detected in the Gun Club Well, and not on a consistent basis. The highest measured concentration of TCE in samples collected from the well is 0.75 µg/L. The Primary Drinking Water Standard for TCE is 5.0 µg/L and the Public Health Goal is 0.8 µg/L. Perchlorate has not been detected in the well, although it is found in the groundwater upgradient from the well. The Public Health Goal is 6 µg/L. There is no Primary or Secondary Drinking Water Standard for perchlorate.
10. The initial treatment system consists of two granular activated carbon (GAC) vessels operated in series. GAC has been demonstrated to cost-effectively remove TCE to below 0.5 µg/L. When concentrations of TCE in the effluent of the lead vessel equal concentrations in the influent to the lead vessels, the lead and lag vessels will be switched and the GAC replaced in the former lead vessel. The spent carbon is transported to a permitted facility for reactivation and destruction of the adsorbed VOCs. A bag filter will be used in front of the GAC vessels to remove particulates, thereby reducing the potential for clogging and extending the life of the GAC.
11. If needed, treatment facilities for the removal perchlorate will be added to the GWTF. The perchlorate removal would consist of two ion exchange vessels operated in series in a manner similar to that used for the GAC vessels. Perchlorate is sorbed onto the resin and the resin is changed out when it no longer can remove perchlorate to the effluent limitation. Ion exchange has been demonstrated to effectively remove perchlorate to less than 4 µg/L. Upgradient concentrations of perchlorate in groundwater will be used to determine when it is appropriate to install the ion exchange vessels.

AG Well Treatment Facility and Discharge

12. The AG Well will be used to produce up to 700 gpm. The water will be used 5 days a week, 8 hours per day, for a period of 6 months during the year. The construction operations are expected to continue for up to 5 years. The maximum output per day is 0.336 million gallons. The water will be used on an intermittent basis for mass grading.

13. Currently, only TCE has been detected in the AG Well, with the initial detection occurring in June 2004, reaching a high of 6.5 µg/L in September 2004. Perchlorate has not been detected in the well and it is not found in the plume upgradient from the AG Well.
14. The treatment system consists of GAC vessel(s) to remove the TCE to below effluent limits. When concentrations of TCE in the effluent of the lead vessel equal one-half the effluent limit, then the GAC will be replaced. The spent carbon is transported to a permitted facility for reactivation and destruction of the adsorbed VOCs. A bag filter may be used in front of the GAC vessels to remove particulates, thereby reducing the potential for clogging and extending the life of the GAC.

Groundwater Degradation

15. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (hereafter Resolution 68-16 or the “Antidegradation Policy”) requires the Board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board’s policies (e.g., quality that exceeds water quality objectives).
16. The discharge will consist of extracted groundwater being, treated to remove the VOCs, and placed on ground. It is extremely unlikely that the treated groundwater will recharge groundwater. However, if recharge does occur the recharge water will be of similar quality as the groundwater to which it is being recharged. Therefore, no degradation of the groundwater will occur due to the discharge. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16.
17. This Order does not require that the Dischargers conduct groundwater monitoring. Groundwater monitoring and analyses are already required under orders issued by the Board and Department of Toxic Substances Control (DTSC), with oversight by DTSC and Board staff.

Basin Plan, Beneficial Uses, and Regulatory Considerations

18. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. These requirements implement the Basin Plan.
19. Surface water drainage is to Morrison Creek, tributary to Stone Lakes, tributary to the Sacramento River. The beneficial uses of the Sacramento River are municipal and domestic supply; agricultural irrigation and stock watering supply; process and service industrial supply; contact recreation, other noncontact recreation; warm and cold freshwater habitat; warm and cold migration; warm water spawning; wildlife habitat; and navigation.
20. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

21. The Basin Plan establishes numerical and narrative water quality objectives for surface and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Board will, on a case-by-case basis, adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.
22. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
23. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain tastes or odors producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
24. Section 13241 of the Water Code requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality objectives. These waste discharge requirements implement adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.
25. On 1 December 2001, in accordance with the California Environmental Quality Act (CCR, Title 14, Section 15261 et. seq.), the Department of Toxic Substances Control certified a final Class 6 Categorical Exemption for the groundwater treatment facilities.
26. Section 13267(b) of the California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of

these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.” The monitoring and reporting program and technical reports required by this Order and the attached “Monitoring and Reporting Program, Order No. R5-2005-XXXX” are necessary to assure compliance with these waste discharge requirements. The Dischargers operate the facility that discharges the waste subject to this Order.

27. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the Dischargers or county pursuant to CWC Section 13801, apply to all extraction and monitor wells.
28. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the GWTFs are exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
29. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

30. The Board considered all the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, in establishing the following conditions of discharge.
31. The Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
32. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that The Boeing Company, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.

3. Discharge of waste classified as 'hazardous' under Section 2521, Chapter 15 of Title 23 or 'designated', as defined in Section 13173 of California Water Code is prohibited.

B. Discharge Specifications

1. The daily average flow shall not exceed shall not exceed 20,000 gallons per day for the Gun Club Well and 340,000 gallons per day for the AG Well.
2. Objectionable odor originating at the facility shall not be perceivable beyond the limits of the property owned by the Dischargers.
3. The discharge shall only be in a manner as described in Finding Nos. 1, 4, 5, and 6.

C. Effluent Limitations

1. Treated effluent discharged from the Gun Club Well treatment facilities shall be less than the following limits:

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
TCE	µg/L	0.8	1.6
perchlorate	µg/L	4.0	6.0

2. Treated effluent discharged from the Agricultural Well treatment facilities shall be less than the following limits:

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
TCE	µg/L	2.5	5.0
cis-1,2-Dichloroethylene	µg/L	3.0	6.0
perchlorate	µg/L	4.0	6.0

D. Activated Carbon an Ion Exchange Resin Disposal Specifications

1. Transportation and disposal of GAC and ion exchange resin shall be only by a permitted hauler and disposed at a permitted regeneration/disposal facility.

E. Provisions

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described by Provision 4.

- a. Within **30-days following completion of construction**, the Dischargers shall submit Operation and Maintenance (O&M) Plans for each of the groundwater treatment facilities. The O&M Plans shall instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary. A copy of the O&M Plans shall be kept at the facilities for reference by operating personnel. Key personnel shall be familiar with its contents.

OTHER REPORTS

2. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain work plans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Dischargers shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.
3. The Dischargers shall comply with the Monitoring and Reporting Program No. R5-2005-XXXX, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
4. The Dischargers shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
5. The Dischargers shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with discharge limits specified in this order.
6. As described in the Standard Provisions, the Dischargers shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.
7. The Dischargers shall report to the Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
10. The Dischargers shall submit to the Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Dischargers shall state the reasons for such noncompliance and provide an estimate of the

date when the Dischargers will be in compliance. The Dischargers shall notify the Board in writing when it returns to compliance with the time schedule.

11. In the event of any change in control or ownership of land or waste discharge facilities described herein, the Dischargers shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.
12. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Dischargers shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
13. The Dischargers must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.
14. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
15. The Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on X XXXXXX XXXX.

THOMAS R. PINKOS, Executive Officer